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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,602	09/15/2003	Sung Uk Moon	242752US90	8504

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EXAMINER	
PANWALKAR, VINEETA S	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
01/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/661,602	MOON ET AL.	
	Examiner	Art Unit	
	Vineeta S. Panwalkar	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *5-10 and 15-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 11-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 July 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1a. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

1b. As stated in the interview summary form mailed on 11/15/07, previously cited reference Aoyama et al. (US 6968212 B1, hereinafter, Aoyama) does not qualify as prior art under 35. U.S.C. 102(e). However, Ayoma et al. WO01/91332 A1, hereinafter, Ayoma-WO, qualifies as prior art under 35. U.S.C102(b). when Ayoma-WO was entered into the US national stage under 35 U.S.C. 371, the applicants Ayoma et al. submitted that Ayoma (now US patent 6968212 B1, then US application 10/031873) is the official English language translation of Ayoma-WO. Hence, hereinafter, Ayoma has been used as the official translation of Ayoma-WO. Therefore, although the rejection is based on Ayoma-WO, the figure, column and line numbers referred to are from Ayoma.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayoma-WO. (Previously cited reference Ayoma has been used as the official translation of Ayoma-WO. Therefore, although the rejection is based on Ayoma-

WO, the figure, column and line numbers referred to are from previously cited reference, Ayoma).

2a. Regarding claims 1 and 11, Aoyama-WO shows base station apparatus and packet transmission method used in a CDMA radio communication system wherein is shown a modulation device comprising:

- a modulation unit that modulates data in a hierarchical manner using multiple types of modulation techniques(Fig. 2, column 2, line 35 – column 4, line 25 of Ayoma; modulation section 153 is interpreted as claimed modulation unit. Modulation system determining section 152 selects one of 16QAM or 64QPSK or QPSK (claimed multiple types of modulation techniques) based on determined priority (claimed hierarchy). Then, modulation system determining section 152 instructs modulation section 153 about the modulation system. Thus, modulation unit 153 performs a different type of modulation, as instructed by section 152, which determines the type of modulation based on the priority determined. Hence modulation unit 153 is interpreted as claimed modulation unit performing claimed hierarchical modulation); and
- a transmission unit that transmits the hierarchically modulated data (Fig. 2, column 2, line 35 – column 4, line 25 of Ayoma; antennas 101, 102, 103 and duplexer 104 are interpreted as claimed transmission unit).

Regarding claim 11, Aoyama-WO discloses corresponding method.

2b. Regarding claims 2 and 12, Aoyama-WO further shows the modulation device, comprising:

- a sampling pattern generating unit that generates a sampling pattern for each of the multiple types of modulation techniques, the sampling pattern defining a sampling space for quantizing said data in accordance with each of said modulation techniques, wherein the modulation unit modulates said data in the hierarchical manner using a digital signal sampled based on the sampling pattern (Fig. 2, column 2, line 35 – column 4, line 25 of Ayoma. Since modulation system determining section 152 selects a type of modulation technique, as claimed (16QAM, 64QPSK or QPSK). Thus modulation system determining section 152 is interpreted as claimed sampling pattern generating unit because it defines the sampling space of the carrier used in modulation, i.e. it defines the type of modulation scheme to be used (16QAM and 64QPSK or QPSK)).

Regarding claim 12, Aoyama-WO discloses corresponding method.

2c. Regarding claims 3 and 13, Aoyama-WO further shows the modulation device, wherein:

- the sampling pattern defines the sampling space of a carrier used in one of multi-phase phase shift keying and multi-value quadrature amplitude modulation. (Fig.2, column 2, line 35 – column 4, line 25 of Ayoma; 16QAM is

claimed multi-value quadrature amplitude modulation and 64QPSK is claimed multi-phase phase shift keying).

Regarding claim 13, Aoyama-WO discloses corresponding method.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama-WO in view of Marchetto et al. (US 5914959), hereinafter, Marchetto.

3a. Regarding claims 4 and 14, Aoyama-WO shows all the limitations claimed (See 3b above), but fails to explicitly disclose whether the sampling pattern is transmitted along with the modulated data.

In the same field of endeavor, however, Marchetto shows a digital communication having an automatically selectable transmission rate wherein:

- the transmission unit transmits the sampling pattern, together with the hierarchically modulated data.(See column 1, line 55 – column 3, line 22. A base transmitter (claimed transmission unit) transmits a data signal using an initial set of constellation points. The pilot block symbol identifying the constellation pattern (claimed sampling pattern) is transmitted with the data stream, i.e. claimed sampling pattern is transmitted with the data stream).

Thus, it would have been obvious to a person of ordinary skill in the art to use a pilot symbol identifying the constellation pattern (or to transmit the sampling pattern) along with modulated data as shown by Marchetto in the modulation device shown by Aoyama-WO, because Marchetto's technique will ensure proper demodulation of the data at the receiver (Column 3, lines 10-22).

Regarding claim 14, Aoyama-WO and Marchetto disclose corresponding method.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vineeta S. Panwalkar whose telephone number is 571-272-8561. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VP

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER